IN THE CLAIMS

1. (Currently Amended) Noninvasive method for measuring blood components, wherein, with the use of spectrophotometry, light from at least one light source is generated and passed through a tissue located at an application site to at least one photoelectric transducer, and wherein at least one measuring signal of the photoelectric transducer is conducted to an evaluation unit, ~~characterized by the fact that~~ wherein light signals of a first wavelength are generated at two successive times T_1 and T_2, that light signals of a second wavelength are generated at two successive times T_3 and T_4, that light signals of a third wavelength are generated at two successive times T_5 and T_6, and that this procedure is continued for n pairs of times T_n and T_{n+1} at n wavelengths. The times T_n .... T_{n+1} have a well-defined relationship with respect to time. Time differences between individual times can be small. The evaluation unit considers the incoming signals from the photoelectric transducer for all n wavelengths according to a predetermined computational model to determine the concentration of a blood component.

2. (Currently Amended) Method in accordance with Claim 1, ~~characterized by the fact that~~ wherein the evaluation unit considers a quotient of the measuring signals.

3. (Currently Amended) Method in accordance with ~~Claim 1 or Claim 2, characterized by the fact that~~ Claim 1, wherein the logarithms of the measured values are taken.

4. (Currently Amended) Method in accordance with ~~any of Claims 1 to 3, characterized by the fact that~~ Claim 1, wherein a quotient of the logarithmized measured values is considered.

5. (Currently Amended) Method in accordance with ~~any of Claims 1 to 4, characterized by the fact that~~ Claim 1, wherein the light is generated by light-emitting diodes.

6. (Currently Amended) Method in accordance with ~~any of Claims 1 to 5, characterized by the fact that~~ Claim 1, wherein the incoming signal is received by a photodiode.

7. (Currently Amended) Method in accordance with ~~any of Claims 1 to 6, characterized by the fact that~~ Claim 1, wherein at least three different light sources are used.

8. (Currently Amended) Method in accordance with ~~any of Claims 1 to 7, characterized by the fact that~~ Claim 1, wherein the total hemoglobin concentration is determined.

9. (Currently Amended) Method in accordance with ~~any of Claims 1 to 7, characterized by the fact that~~ Claim 1, wherein the concentration of components that are not associated with hemoglobin is determined.

10. (Currently Amended) Method in accordance with ~~any of Claims 1 to 7, characterized by the fact that~~ Claim 1, wherein the concentration of bilirubin is determined.

11. (Currently Amended) Method in accordance with ~~any of Claims 1 to 7, characterized by the fact that~~ Claim 1, wherein the concentration of myoglobin is determined.

12. (Currently Amended) Method in accordance with ~~any of Claims 1 to 7, characterized by the fact that~~ Claim 1, wherein the concentration of iatrogenically administered dyes is determined.

13. (Currently Amended) Device for measuring blood components, which has at least one light source, at least one photoelectric transducer, and at least one evaluation unit connected with the photoelectric transducer, ~~characterized by the fact that~~ wherein at least three light sources (1, 2, 3) are used, which generate wavelengths that are different from one another, and that the evaluation unit (6) has an arithmetic unit (7) both for taking logarithms and for performing divisions, multiplications, additions, and subtractions.

14. (Currently Amended) Device in accordance with Claim 13, ~~characterized by the fact that~~ wherein at least one of the light sources (1, 2, 3) is realized as a light-emitting diode.

15. (Currently Amended) Device in accordance with ~~Claim 13 or Claim 14, characterized by the fact that~~ Claim 13, wherein the photoelectric transducer is realized as a photodiode.

16. (Currently Amended) Device in accordance with ~~any of Claims 13 to 15, characterized by the fact that~~ Claim 13, wherein each of the light sources (1, 2, 3) generates light in a narrowly defined frequency band.

17. (Currently Amended) Device in accordance with ~~any of Claims 13 to 16, characterized by the fact that~~ Claim 13, wherein one of the light sources (1, 2, 3) generates light with a wavelength of about 660 µm.

18. (Currently Amended) Device in accordance with ~~any of Claims 13 to 16, characterized by the fact that~~ Claim 13, wherein one of the light sources (1, 2, 3) generates light with a wavelength of about 805 µm.

19. (Currently Amended) Device in accordance with ~~any of Claims 13 to 16, characterized by the fact that~~ Claim 13, wherein one of the light sources (1, 2, 3) generates light with a wavelength of about 950 µm.